



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,715	02/12/2004	Dwip N. Banerjee	AUS920040013US1	5927
46073	7590	04/30/2008		
IBM CORPORATION (VE) C/O VOLEL EMILE P. O. BOX 162485 AUSTIN, TX 78716			EXAMINER CHERNYAK, IGOR V	
			ART UNIT 2619	PAPER NUMBER
			MAIL DATE 04/30/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/777,715	<b>Applicant(s)</b> BANERJEE ET AL.	
	<b>Examiner</b> IGOR V. CHERNYAK	<b>Art Unit</b> 2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

Amendment, filed 02/07/2008 has been entered. Claims 1 - 20 remain pending.

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1 - 20** are rejected based on broadest interpretation under 35 U.S.C. 102(e) as being anticipated by **Vangal et al. (US 2004/0125751 A1)** hereinafter **Vangal**.

3. Regarding to **claims 1, 6, 11, Vangal** discloses a method of aggregating N (n-aggregated engines 100a-100n, refer to Figure 1 and Paragraphs [0027], [0028]) Transport Control Protocol-offloaded (TCP-offloaded) adapters (conventionally known as Transport Control Protocol (TCP) off-load engines) (Transport Control Protocol (TCP) off-load engines, refer to Abstract) of a first communications system (as shown, the engines 100a-100n output the results of the network operations performed by an engine via an interface to a bus 104 that leads, for example, to a host system, i.e. “a first communications system”, refer to Figure 1 and Paragraphs [0027], [0028]) to augment network data (network off-load engines can ease the burden of handling network

Art Unit: 2619

operations on host systems ..... For example, while an engine have resources to support 128-connections, a given host system may be expected to support hundreds to thousands of connections at a time, refer to Paragraph [0026]) transaction bandwidth of the first communications system by a factor of N, N being an integer, the method comprising (FIG. 1 illustrates a scheme that aggregates multiple off-load engines 100a-100n. Thus, instead of C-connections supported by a single engine, the n-aggregated engines 100a-100n can support n.times.C connections ..... In greater detail, engines 100a-100n include an interface to receive packets over data lines 106 ..... As shown, the engines 100a-100n output the results of the network operations performed by an engine via an interface to a bus 104 that leads, for example, to a host system, refer to Figure 1 and Paragraphs [0027], [0028]):

aggregating the N TCP-offloaded adapters (n-aggregated engines 100a-100n, refer to Figure 1 and Paragraphs [0027], [0028]) by assigning a common Internet Protocol (IP) address to the N TCP-offloaded adapters (Figure 4 and Paragraph [0038]);

selecting one (allocate an engine for the new connection, refer to Figures 4 and Paragraphs [0038], [0039]) of the N aggregated TCP-offloaded adapters (n-aggregated engines 100a-100n, refer to Figure 1 and Paragraphs [0027], [0028]) through which a connection between the first and a second communications systems ("off-load" engine can perform network protocol operations for one or more hosts, i.e. "communications systems", refer to Paragraph [0024]) is to originate;

originating the connection using the selected TCP-offloaded adapter (allocated engine can handle the current and future segments in the connection, refer to Figures 4 and Paragraphs [0039]), the connection for transacting data over a network (in greater detail, engines 100a-100n include an

Art Unit: 2619

interface to receive packets over data lines 106 ..... As shown, the engines 100a-100n output the results of the network operations performed by an engine via an interface to a bus 104 that leads, for example, to a host system, i.e. “a first communications system”, refer to Figure 1 and Paragraphs [0027], [0028]) between the first and the second communications systems (“off-load” engine can perform network protocol operations for one or more hosts, i.e. “communications systems”, refer to Paragraph [0024]); and transacting data through a computing device (Figure 1), the computing device to assemble data from the N TCP-offloaded adapters (FIG. 1 illustrates a scheme that aggregates multiple off-load engines 100a-100n. Thus, instead of C-connections supported by a single engine, the n-aggregated engines 100a-100n can support n.times.C connections, refer to Figure 1 and Paragraphs [0027], [0028]) to the network and for channeling data associated with the connection (in greater detail, engines 100a-100n include an interface to receive packets over data lines 106 ..... As shown, the engines 100a-100n output the results of the network operations performed by an engine via an interface to a bus 104 that leads, for example, to a host system, refer to Figure 1 and Paragraphs [0027], [0028]) from the network to the selected TCP-offloaded adapter (FIG. 4 depicts a flow chart of a process for allocating connections to different off-load engines. As shown, after receiving 140 a packet, the process determines 142 whether the packet is part of a new connection or is part of one already allocated to an engine, refer to Figure 4 and Paragraphs [0038], [0039]).

4. Regarding to **claim 2**, **Vangal** discloses selecting one of the N aggregated TCP-offloaded adapters (n-aggregated engines 100a-100n, refer to Figure 1 and Paragraphs [0027], [0028]) through which a connection between the first and the second communications systems (“off-

Art Unit: 2619

load" engine can perform network protocol operations for one or more hosts, i.e.

"communications systems", refer to Paragraph [0024]) is to originate is based on a local port and a remote port, the local port and the remote port being the ports through which the data transaction is to occur (source and destination ports, refer to Figures 4, 5 and Paragraphs [0038], [0046]).

5. Regarding to **claim 3, Vangal** discloses selecting one (allocate an engine for the new connection, refer to Figures 4 and Paragraphs [0038], [0039]) of the N aggregated TCP-offloaded adapters (n-aggregated engines 100a-100n, refer to Figure 1 and Paragraphs [0027], [0028]) through which a connection between the first and the second communications systems ("off-load" engine can perform network protocol operations for one or more hosts, i.e.

"communications systems", refer to Paragraph [0024]) is to originate includes the step of assigning a local port through which the connection is to occur if a local port was not yet assigned (source port, refer to Figures 1,4,5 and Paragraphs [0038], [0039], [0046], [0047], [0054] to [0056]).

6. Regarding to **claims 4,9,14, Vangal** discloses the assigned local port is an ephemeral ("Ephemeral port - port numbers that are dynamically assigned to a client process by the client's TCP/IP instance." <http://publib.boulder.ibm.com>;

"Ephemeral ports are temporary ports assigned by a machine's IP stack, and are assigned from a designated range of ports for this purpose. When the connection terminates, the ephemeral port is available for reuse, although most IP stacks won't reuse that port number until the entire pool of ephemeral ports have been used. So, if the client program reconnects, it will be assigned a different ephemeral port number for its side of the new connection." <http://www.ncftp.com>) port

Art Unit: 2619

(source port (essentially utilizing ephemeral port), refer to Figures 1,4,5 and Paragraphs [0038], [0039], [0046], [0047], [0054] to [0056]).

7. Regarding to **claims 5, 10, 15, Vangal** discloses the data includes incoming and outgoing data, the incoming data being divided into data packets (an input sequencer/buffer 162 that parses a received packet's header(s), refer to Figures 5,7 and Paragraphs [0045], [0046], [0059]), each packet having associated therewith a local port and a remote port for selecting a TCP-offloaded adapter through (Figure 5 and Paragraph [0046]) which to be channeled (in greater detail, engines 100a-100n include an interface to receive packets over data lines 106 ..... As shown, the engines 100a-100n output the results of the network operations performed by an engine via an interface to a bus 104 that leads, for example, to a host system, refer to Figure 1 and Paragraphs [0027], [0028]).

8. Regarding to **claims 7,12, Vangal** discloses a local port and a remote port, the local port and the remote port being the ports through which the data transaction is to occur (source and destination ports, refer to Figures 4, 5 and Paragraphs [0038], [0046]).

9. Regarding to **claims 8,13, Vangal** discloses assigning a local port through which the connection is to occur if a local port was not yet assigned (source port, refer to Figures 1,4,5 and Paragraphs [0038], [0039], [0046], [0047], [0054] to [0056]).

10. Regarding to **claim 16, Vangal** discloses a system for aggregating N (n-aggregated engines 100a-100n, refer to Figure 1 and Paragraphs [0027], [0028]) Transport Control Protocol-offloaded (TCP-offloaded) adapters (conventionally known as Transport Control Protocol (TCP) off-load engines) (Transport Control Protocol (TCP) off-load engines, refer to Abstract) to augment network data (network off-load engines can ease the burden of handling network

Art Unit: 2619

operations on host systems ..... For example, while an engine have resources to support 128-connections, a given host system may be expected to support hundreds to thousands of connections at a time, refer to Paragraph [0026]) transaction bandwidth by a factor of N, N being an integer, the system comprising (FIG. 1 illustrates a scheme that aggregates multiple off-load engines 100a-100n. Thus, instead of C-connections supported by a single engine, the n-aggregated engines 100a-100n can support n.times.C connections ..... In greater detail, engines 100a-100n include an interface to receive packets over data lines 106 ..... As shown, the engines 100a-100n output the results of the network operations performed by an engine via an interface to a bus 104 that leads, for example, to a host system, refer to Figure 1 and Paragraphs [0027], [0028]):

at least one storage device (storage 172, refer to Figure5 and Paragraph [0043]) for storing code data; and

at least one processor (processor 170, refer to Figure5 and Paragraph [0043]) for processing the code data to aggregate the N TCP-offloaded adapters (n-aggregated engines 100a-100n, refer to Figure 1 and Paragraphs [0027], [0028]) by assigning a common Internet Protocol (IP) address to the N TCP-offloaded adapters (Figure 4 and Paragraph [0038]), to select one of the aggregated N TCP-offloaded adapters (allocate an engine for the new connection, refer to Figures 4 and Paragraphs [0038], [0039]) through which a connection between the system and a remote communications system ("off-load" engine can perform network protocol operations for one or more hosts, i.e. "communications systems", refer to Paragraph [0024]) is to originate, to originate the connection using the selected TCP-offloaded adapter (allocated engine can handle the current and future segments in the connection, refer to Figures 4 and Paragraphs [0039]), the



Art Unit: 2619

connection for transacting data over a network (in greater detail, engines 100a-100n include an interface to receive packets over data lines 106 ..... As shown, the engines 100a-100n output the results of the network operations performed by an engine via an interface to a bus 104 that leads, for example, to a host system, i.e. “a first communications system”, refer to Figure 1 and Paragraphs [0027], [0028]) between the system and the remote communications systems (“off-load” engine can perform network protocol operations for one or more hosts, i.e.

“communications systems”, refer to Paragraph [0024]), and to transact data through a computing device (Figure 1), the computing device to assemble data from the N TCP-offloaded adapters (FIG. 1 illustrates a scheme that aggregates multiple off-load engines 100a-100n. Thus, instead of C-connections supported by a single engine, the n-aggregated engines 100a-100n can support n.times.C connections, refer to Figure 1 and Paragraphs [0027], [0028]) to the network and for channeling data associated with the connection (in greater detail, engines 100a-100n include an interface to receive packets over data lines 106 ..... As shown, the engines 100a-100n output the results of the network operations performed by an engine via an interface to a bus 104 that leads, for example, to a host system, refer to Figure 1 and Paragraphs [0027], [0028]) from the network to the selected TCP-offloaded adapter (FIG. 4 depicts a flow chart of a process for allocating connections to different off-load engines. As shown, after receiving 140 a packet, the process determines 142 whether the packet is part of a new connection or is part of one already allocated to an engine, refer to Figure 4 and Paragraphs [0038], [0039]) (Figures 4,5 and Paragraphs [0038] to [0047]).

11. Regarding to **claim 17**, **Vangal** discloses processing the code data to select one of the TCP-offloaded adapter includes processing the code data to use a local port and a remote port to

Art Unit: 2619

select the TCP-offloaded, the local port and the remote port being the ports through which the data transaction is to occur (source and destination ports, refer to Figures 4, 5 and Paragraphs [0038] to [0046]).

12. Regarding to **claim 18, Vangal** discloses the code data to select one of the TCP-offloaded adapter includes processing the code data to assign a local port through which the connection is to occur if a local port was not yet assigned (source port, refer to Figures 1,4,5 and Paragraphs [0038], [0039], [0046], [0047], [0054] to [0056]).

13. Regarding to **claim 19, Vangal** discloses the assigned local port is an ephemeral port (source port (essentially utilizing ephemeral port), refer to Figures 1,4,5 and Paragraphs [0038], [0039], [0046], [0047], [0054] to [0056]).

14. Regarding to **claim 20, Vangal** discloses the data includes incoming and outgoing data, the incoming data being divided into data packets (an input sequencer/buffer 162 that parses a received packet's header(s), refer to Figures 5, 7 and Paragraphs [0045], [0046], [0059]), each packet having associated therewith a local port and a remote port for selecting a TCP-offloaded adapter through (Figure 5 and Paragraph [0046]) which to be channeled (in greater detail, engines 100a-100n include an interface to receive packets over data lines 106 ..... As shown, the engines 100a-100n output the results of the network operations performed by an engine via an interface to a bus 104 that leads, for example, to a host system, refer to Figure 1 and Paragraphs [0027], [0028]).

***Response to Arguments***

15. Applicant's arguments filed 02/07/2008 have been fully considered but they are not persuasive. On page 11 of the Response, Applicant asserts that Vangal fails to disclose "transacting data through a computing device, the computing device to assemble data from the N TCP- offloaded adapters to the network and for channeling data associated with the connection from the network to the selected TCP-offloaded adapter". Examiner respectfully asserts that Vangal discloses this limitation. Vangal discloses that transacting data through a computing device (Figure 1), the computing device to assemble data from the N TCP-offloaded adapters (FIG. 1 illustrates a scheme that aggregates multiple off-load engines 100a-100n. Thus, instead of C-connections supported by a single engine, the n-aggregated engines 100a-100n can support n.times.C connections, refer to Figure 1 and Paragraphs [0027], [0028]) to the network and for channeling data associated with the connection (in greater detail, engines 100a-100n include an interface to receive packets over data lines 106 ..... As shown, the engines 100a-100n output the results of the network operations performed by an engine via an interface to a bus 104 that leads, for example, to a host system, refer to Figure 1 and Paragraphs [0027], [0028]) from the network to the selected TCP-offloaded adapter (FIG. 4 depicts a flow chart of a process for allocating connections to different off-load engines. As shown, after receiving 140 a packet, the process determines 142 whether the packet is part of a new connection or is part of one already allocated to an engine, refer to Figure 4 and Paragraphs [0038], [0039]).

As such, Examiner maintains current rejection of claims 1 - 20.

***Conclusion***

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IGOR V. CHERNYAK whose telephone number is (571) 270-1957. The examiner can normally be reached on Monday - Thursday 8:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, CHIRAG G. SHAH can be reached on (571) 272-3144. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2619

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Igor V. Chernyak/  
Patent Examiner, Art Unit 2619

/Chirag G Shah/  
Supervisory Patent Examiner, Art Unit 2619